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Forest Service

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Biological Assessment

South Zone Kaibab National Forest Travel Management Revision

Tusayan and Williams Ranger District, Kaibab National Forest
Coconino County, Arizona

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Introduction

This Biological Assessment (BA) reviews the proposed activities that are part of the Travel Management Revision project on the South Zone of the Kaibab National Forest, Tusayan and Williams Ranger Districts in Coconino County, Arizona and determines the potential effects to wildlife species and their habitats in and adjacent to the project area. This analysis focuses on the footprint of National Forest System roads with proposed status changes and proposed camping corridors (300 feet from either side of the roadway center line for alternative 3). This report is based upon literature review (including the Kaibab National Forest Plan), district data, and a field assessment of habitat conditions.

The purpose of a Biological Assessment is to incorporate all effects on federally listed species from a proposed project. This document will:

- Review all Department of Agriculture (USDA) Forest Service planned, funded, and executed, or permitted programs and activities for possible effects on endangered, threatened, and proposed species (FSM 2672.4).
- Comply with the requirements of the Endangered Species Act and implement a program to conserve fish, wildlife, and plants and ensure actions do not jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat (FSM 2672.41).
- Provide a process and standard by which to ensure that threatened and endangered species receive full consideration in the decision making process (FSM 2672.41).
- Identify the need for any additional mitigation measures to protect species included in this report, habitat, or potential habitat from the effects of the proposed management actions.
- Comply with the requirements of the Kaibab National Forest Land Management Plan.

"Endangered" (E), "threatened" (T), and "proposed" (P) refer to those species covered by the Federal Endangered Species Act (19 USC 1536(c), 50 CFR 402.12(f) and 402.14(c)) and listed by the Department of Interior Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS).

The project area consists of the Williams and Tusayan Ranger Districts of the Kaibab National Forest (collectively known as the South Zone; figure 1). The Williams Ranger District surrounds the city of Williams, approximately 35 miles west of the City of Flagstaff and approximately 60 miles south of Grand Canyon National Park. The Williams Ranger District is situated in portions of townships 19, 20, 21, 22, 23, 24, and 25 north, and ranges 1, 2, 3, 4, and 5 east and 1 and 2 west (Gila and Salt River Base Meridian) and is approximately 560,000 acres in size. The Tusayan Ranger District is located north of the Williams Ranger District and south of Grand Canyon National Park. The Tusayan Ranger District is situated in portions of townships 28, 29, 30, and 31 north and ranges 1 west and 1, 2, 3, 4, 5, and 6 east and is approximately 330,000 acres in size.

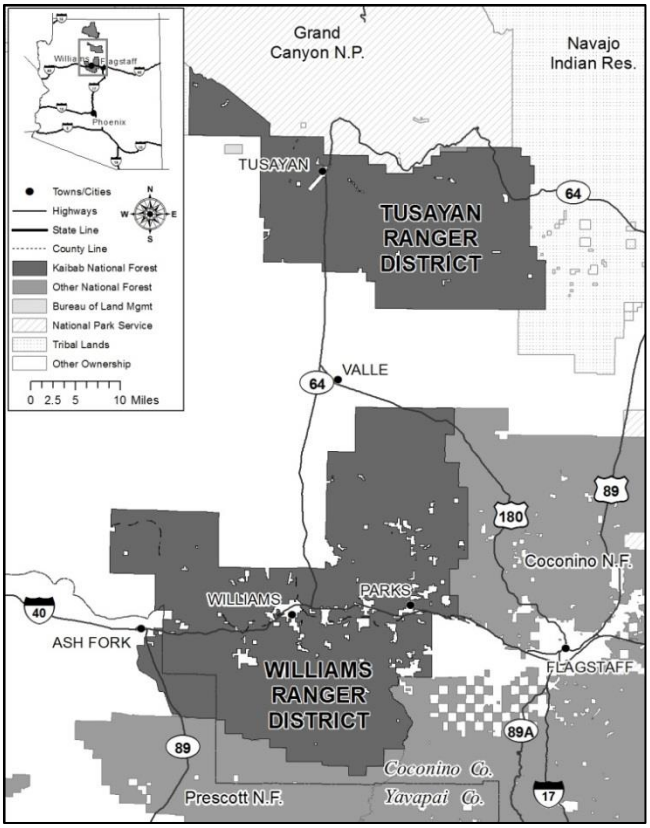

Figure 1. Project vicinity map

Purpose and Need

The purpose of this project is to improve the travel management program on the South Zone in response to issues raised during the monitoring process. Monitoring highlighted a need to manage motor vehicle use in a way that would better facilitate achievement of the desired conditions outlined in the Kaibab National Forest Plan (Forest Plan).

The desired conditions for recreation on the Kaibab include the goal that Forest users "have access to a variety of…dispersed [recreation] opportunities" and that the Forest provides "sustainable recreation consistent with public demand" with "use levels [that] are compatible with other resource values" and that "compliment and support local economies and tourism" (USDA FS 2014a, p. 63). However, the past three years of monitoring the implementation of the Williams and Tusayan Ranger Districts 2010 and 2011 Travel Management Rule (TMR) decisions, respectively, has clearly indicated that the current travel management program does not meet the public's need for access to dispersed motorized camping and is not consistent with the public demand for a safe, enjoyable recreation experience that accommodates the needs of a broad spectrum of Forest users. Multiple comments received through monitoring cited safety and aesthetic concerns associated with camping within 30 feet of roads, and noted that adjacent Forests allow dispersed motorized camping greater distances away from many roads. Such concerns may result in a decrease in camping use because visitors' needs are better met by other nearby Forests, which may negatively impact tourism on and around the South Zone and the

local economies that depend upon it. Additionally, restricting motorized camping to within 30 feet of open roads does not provide access to many of the historically used and therefore already impacted campsites, which may result in impacts to previously undisturbed areas located within 30 feet of roads.

The Forest Plan also outlines the goal that the Forest transportation system provides "safe, legal and reasonable access for recreation opportunities and resource management" that balances "resource impacts from roads and trails… with the benefits of having the road or trail available for use" (USDA FS 2014a, p. 76). In addition to the safety issues described above, many comments received during monitoring expressed concerns that certain road closures inappropriately restricted access to certain portions of the South Zone for recreation or resource management activities. Conversely, other comments highlighted certain open roads on which motorized travel was resulting in resource damage. Although many roads were closed under the 2010 and 2011 TMR decisions to mitigate resource concerns, the rationale for eliminating certain roads highlighted in monitoring as needed for access was not well documented.

The South Zone is limited under its current travel management program in its ability to respond to such issues because additional environmental analysis is required. It is likely that there will be a continued need in the future to make similar changes to the road system to meet desired conditions related to resource protection and Forest access. As a result, there is a need to develop an adaptive management strategy that would allow for limited future changes to the road system using a streamlined process.

Description of Alternative 3

The South Zone of the Kaibab National Forest proposes the following actions to meet the purpose of and need for this project:

- Designate approximately 291 miles of camping corridors along all or portions of Forest roads 11, 12, 13, 14, 105, 108, 109, 110, 115, 122, 124, 129, 138, 139, 140, 141, 142, 171, 194, 354, 4, 41, 48, 56, 57, 71, 714, 76, 747, 749, 786, and 90 on the Williams Ranger District (figure 2-1) and 2732, 301, 302, 303, 304, 306, 307, 310, 320, 328, 347, 605, 605M, and 688 on the Tusayan Ranger District (figure 2-2). The corridors would extend 300 feet from either side of the centerline of the road, except where limited by topographical factors, resource concerns, or private land. See table 1.
- Add 15 spur roads to the open road system. These spurs total approximately 1.3 miles and would provide access to areas historically used for motorized camping on the Tusayan Ranger District (figure 2).
- Close approximately nine miles of currently open roads (figures 2 and 3; table 1).
- Add approximately 39 miles of roads to the open road system. (figures 2 and 3; table 1).
- Develop an adaptive management strategy for making future changes to the MVUM based on changing needs and/or new information.

Alternatives were modified in response to scoping in order to provide better camping access in some portions of the South Zone with historically dispersed motorized camping areas.

Table 1. Alternative 3

Proposed roads for dispersed motorized camping corridors						
Williams Ranger District					*Tusayan Ranger District*	
11	110	140	41	747	2732	310
12	115	141	48	749	301	320
13	122	142	56	786	302	328
14	124	171	57	90	303	347
105	129	194	71		304	605
108	138	354	714		306	605M
109	139	4	76		307	688

Roads proposed to be reopened to motorized use						
Williams Ranger District		*Tusayan Ranger District*				
122E	2007	2512	2612A	308B	335C-PVT	
122NB	2117	2609	2704A	321	377A	
128CG	777	2613	2713BD	335C	64EA	
147A	9023Q	2725	303D	335CA	9128E	
2002	9121B	2609A	303G	335CA-PVT		

Roads proposed to be closed to motorized use		
Williams Ranger District		*Tusayan Ranger District*
124YA	44AA	2615
2HA	44BC	682E
124YG	74AB	
140D	9206J	
160BA		

User-created or tank roads proposed to be added to the open road system				
Williams Ranger District	*Tusayan Ranger District*			
U477	T2512A	T2624A	T303-CV	T347AA
U479	T2512B	T2704A	T303G	T347AB
U640*	T2609A	T2719	T308B	T347A
U694	T2612A	T2725	T328CA	T9128E
U761	T2613	T2730	T343H	

*U640 is a combination of roads U635, U637, and U640. These roads are contiguous but were presented separately in the 2010 EA for the Williams Ranger District.

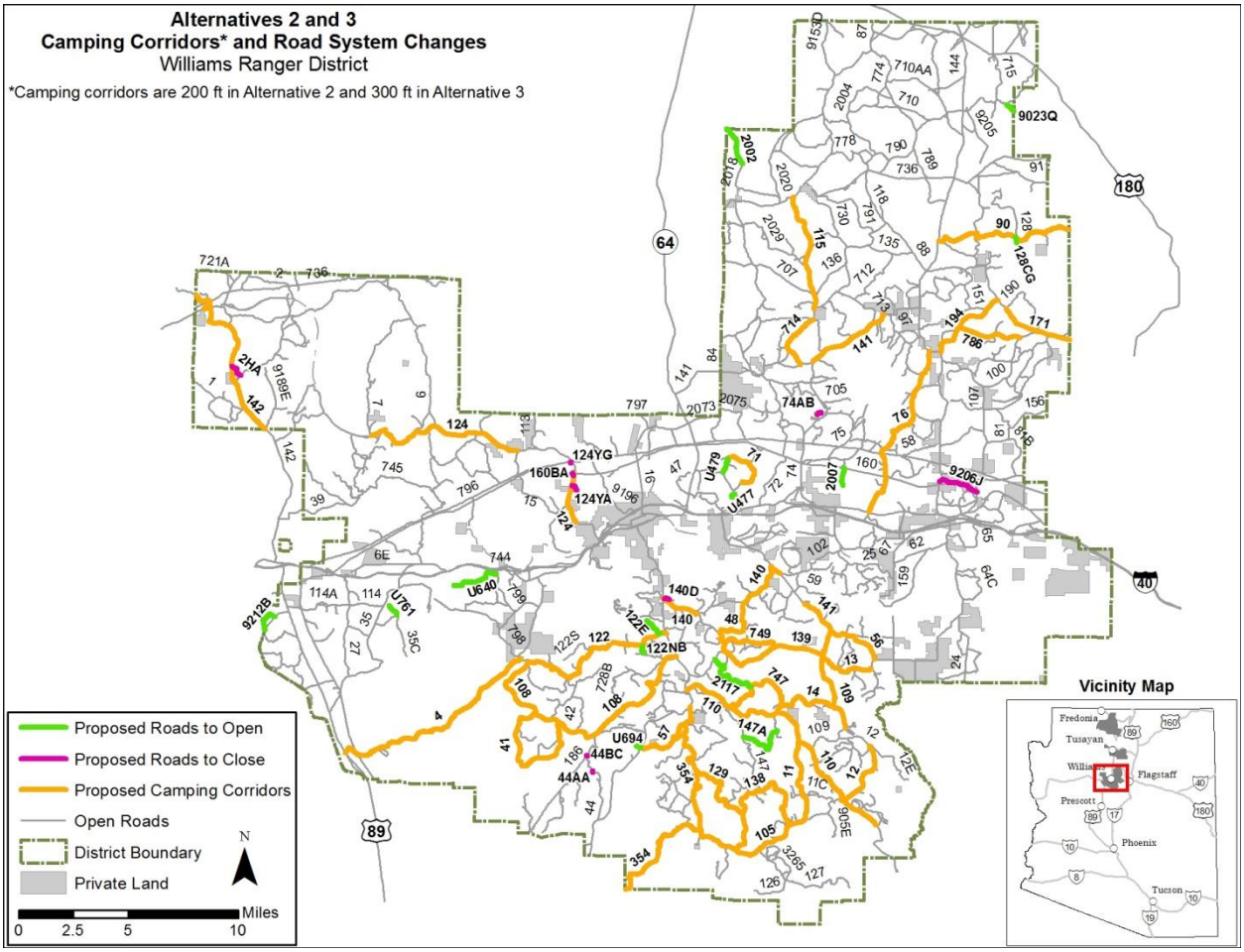

Figure 2. Alternatives 2 and 3 camping corridors and road system changes, Williams Ranger District

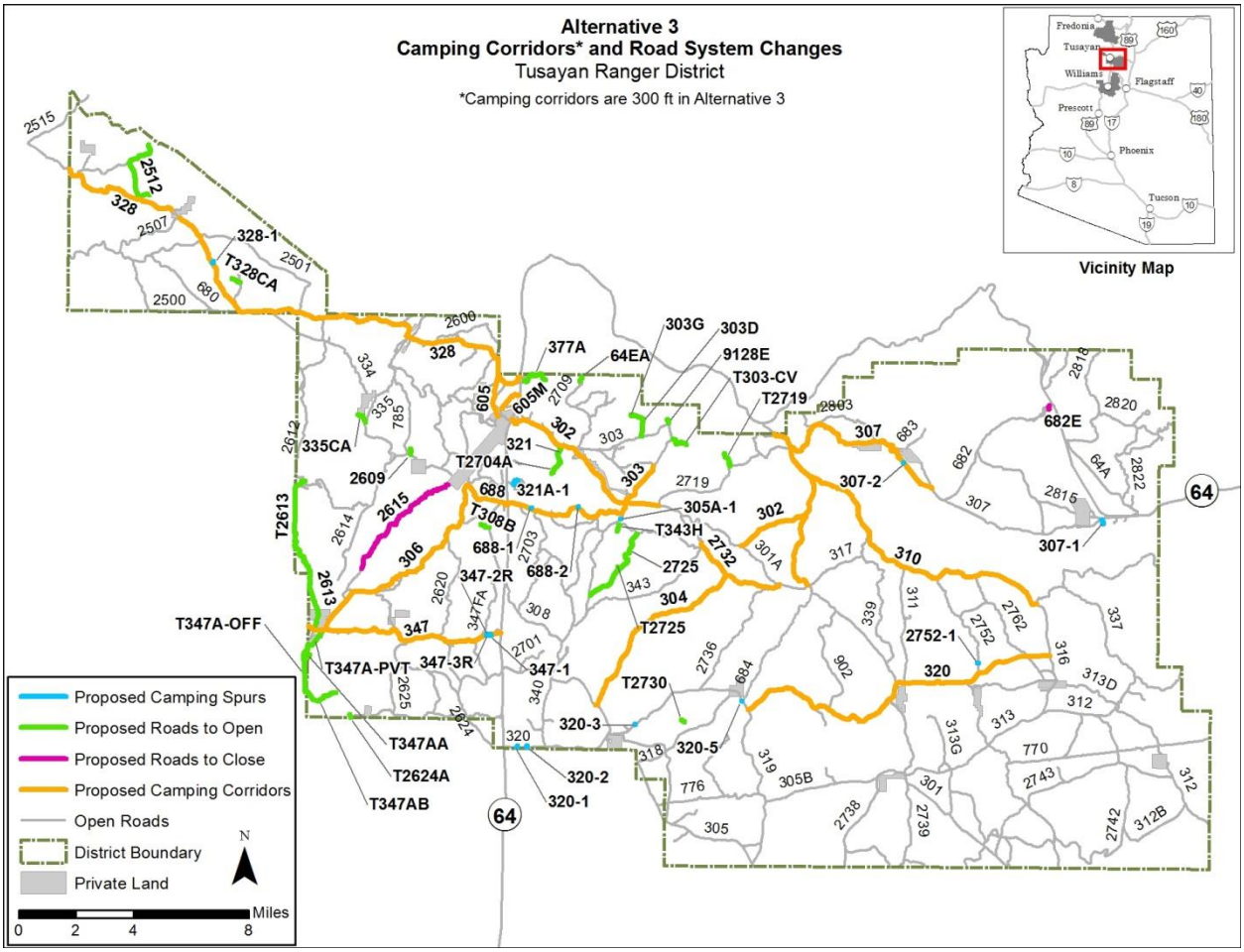

Figure 3. Alternative 3 camping corridors and road system changes, Tusayan Ranger District

Adaptive Management

Several of the proposed road changes highlighted in TMR implementation monitoring were identified as oversights or mistakes in the first round of travel management analysis. However, because of the way the previous decisions were written, the South Zone cannot make these changes without formal analysis and documentation. To make this process more streamlined in the future, the interdisciplinary team (IDT) formed for the analysis of this project has developed an adaptive management strategy that would allow flexibility to make certain adjustments to the open road system in a more timely fashion. This strategy is based on triggers for considering changes, parameters for determining whether to implement a proposed change, guidelines for identifying changes that require further environmental analysis, and documenting any changes made under this strategy.

The adaptive management strategy would allow up to a 5% net change to the road system mileage represented in this project's decision. This represents the potential for the open road system on the South Zone to be expanded or reduced by up to approximately 90 miles over the life of this project. The IDT considered allowing either a 5% or a 10% net change initially and determined that, based on the results of monitoring implementation of the previous TMR decisions, a 5% net change would be adequate to meet the anticipated need to make minor

adjustments to the road system identified in future monitoring. This limits the range of potential effects from these adjustments to that which could reasonably be anticipated in this analysis. The adaptive management strategy would allow for closing a road, camping corridor, or camping spur due to the presence of resource or other concerns; opening a road where no resource concerns are identified, but access for recreational or other purposes is desirable; or adding a spur road where motorized camping has historically occurred and no resource concerns exist. It would not allow for the addition of new corridors, as that would require a level of resource analysis outside the scope of the adaptive management concept.

The adaptive management strategy would be applied within the following parameters:

Closing Roads to Motorized Use/Closing Corridors

Triggers for consideration – Closure of a road or camping corridor would be considered when resource concerns arise through the monitoring process or if the Forest Service determines that the road or corridor is no longer needed in the open road system.

Documentation – The specialists for the resources of concern would document the need for closure. Additional specialists may need to document the effects of closure on other resources. This documentation would be stored in the travel management files.

Decision – The decision whether to close the road or corridor would be made within the following framework:

- High level of resource concerns present: the road or corridor would be closed.
- Low level of resource concerns present: the road or corridor would be considered for partial closure, if practical.

Opening Roads to Motorized Use

Triggers for consideration – Opening a road would be considered when internal or external comments arise during the monitoring process that highlight a potential need to open a road. Only existing system roads may be considered under this strategy; user-created or decommissioned roads would not be eligible. The exception is the consideration of short spur roads leading to historically-used camp sites; these may be considered for addition to the existing road system.

Initial Evaluation – The TMR monitoring team would evaluate existing NEPA documents to determine why a road was previously closed. These documents include, but are not limited to, Travel Analysis Projects (TAPs), previous EAs/EISs/CEs and decision documents, and notes from the monitoring process. The team would review the reasons for the closure and determine whether the road should remain closed or whether the proposal to open it should be carried forward for further review.

If it is determined that the proposed change should move forward, an initial resource review would be conducted. Resource specialists would review the road for resource concerns. If concerns are known to exist, the proposed change would not occur and this decision would be documented.

Analysis – If the initial review does not reveal known resource concerns on the road, specialists would conduct the necessary surveys and clearances to open the road. Surveys would include the road prism as well as 100 feet from the edge of the road surface on both sides of the road. This survey distance is necessary to account for the potential impacts of future road maintenance activities on resources outside the road prism.

Decision – After completion of resource analysis, a decision whether to open the road would be made within the following framework:

- High level of resource concerns present: the road would remain closed.
- Low level of resource concerns present: the road would be considered for partial opening or remaining closed.
- No resource concerns: the road would be opened.

In cases where there are opposing resource issues (for example, the need for access to private property on a road that has soils concerns), the Responsible Official would consider the benefits versus the risks of opening the road, as well as any analysis and mitigations that may be needed.

Camping Corridors

The previous TMR analyses examined approximately 248 miles of road to serve as camping corridors. However, corridors were not included in the final decisions. In light of the need to provide increased motorized camping opportunities, the South Zone is again proposing to establish camping corridors along selected roads. In an effort to streamline analysis, the camping corridors proposed in this project align as much as possible with the original proposed corridors.

Some roads have corridors proposed along their entire length; other roads may only have portions considered for corridors to avoid areas with resource concerns (such as meadows with sensitive soils) or other issues such as private property. The IDT has conducted an initial screening to identify and eliminate portions of corridors where such concerns are known to exist. If additional issues are discovered during analysis, corridors will be adjusted accordingly prior to the decision. Tables 2-1 through 2-3 list the roads along which corridors are proposed.

Changes to the Designated Open Road System

Many comments received through monitoring and scoping requested that specific roads designated as closed to motorized use be changed to open. The IDT reviewed the previous decisions to close these roads. This process verified that many of these roads were closed for specific resource concerns, and therefore they will not be carried forward for analysis. The remaining roads will undergo a more in-depth analysis for impacts to resources resulting from the proposed status change to open.

Eleven roads (totaling approximately nine miles) that are currently listed as open were identified by Forest Service specialists as having serious resource concerns. To address these concerns, the South Zone now seeks to close these roads.

Under the previous analysis for the Williams Ranger District, several user-created roads were proposed as additions to the open road system, but they were not included as part of the final

decision. The South Zone proposes to include some of these roads in the current analysis. These roads would add approximately four miles of open road to the system.

The Forest is also proposing to add 15 spur roads on the Tusayan Ranger District. These roads, totaling approximately 1.3 miles, would provide motorized access to areas historically used for dispersed motorized camping.

Table 1 lists the roads that would be affected by these changes.

Evaluation Criteria for Analysis

Analysis includes quantity and quality of habitat, as well as physiological disturbance from project implementation, in the analysis of environmental consequences for Alternative 3 on all species considered in this report. Analysis includes effects to species within the project area and a 0.5 mile buffer around the project area (i.e., the project's action area), as the effects of noise disturbance and smoke extend beyond the project boundary. For Mexican spotted owl (MSO), analysis includes recovery habitat (both mixed-conifer and pine-oak), and designated MSO critical habitat. Analysis of critical habitat includes the following Primary Constituent Elements of critical habitat for mixed conifer, pine-oak, and riparian forest types (FWS 2004):

A. Primary constituent elements related to forest structure:
   (1) A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30 percent to 45 percent of which are large trees with a trunk diameter of 12 inches (0.3 meters) or more when measured at 4.5 feet (1.4 meters) from the ground;
   (2) A shade canopy created by the tree branches covering 40 percent or more of the ground; and
   (3) Large dead trees (snags) with a trunk diameter of at least 12 inches (0.3 meters) when measured at 4.5 feet (1.4 meters) from the ground.

B. The primary constituent elements related to canyon habitat have the following attributes:
   (1) presence of water (often providing cooler and often more humid conditions than the surrounding areas);
   (2) clumps or stringers of mixed-conifer, pine-oak, piñon-juniper, or riparian vegetation;
   (3) canyon walls containing crevices, ledges, or caves; and
   (4) high percent of ground litter and woody debris.

C. Primary constituent elements related to maintenance of adequate prey species:
   (1) High volumes of fallen trees and other woody debris;
   (2) A wide range of tree and plant species, including hardwoods; and
   (3) Adequate levels of residual plant cover to maintain fruits, seeds, and allow plant regeneration.

Table 2. Habitat Types with approximate acres by alternative in camping corridors.

Habitat Type	Acres (Existing vegetation)	Alt 2 (200 foot corridors)	Alt 3 (300 foot corridors)	Alt 4 (100 foot corridors)
Ponderosa Pine	308,801	8,553	9,631	3,918
Piñon-Juniper	439,767	3,652	4,781	1,293
Grassland	111,772	700	722	221
Mixed Conifer	8,019	1	3	0.2
Aspen	2,025	4.5	4.5	2
Sagebrush	17,298	147	206	60
MSO PACs	4,992	0	0	0
MSO Pine-Oak Recovery Habitat	49,986	1,856	2,764	937
MSO MC Recovery Habitat	3,098	1	8	0.16
MSO Critical Habitat	157,278	5,228	7,820	2,595

Table 3. Proposed open and closed roads MSO habitat for the Travel Management Revision Project.

Habitat Type	Roads To Open Alternatives 2-4 (miles)	Roads To Close Alternatives 2-4 (miles)
MSO PACs	0	0
MSO Pine-Oak Recovery Habitat	2.4	0.2
MSO MC Recovery Habitat	0	0
MSO Critical Habitat	7.24	0.3

The time period analyzed for cumulative wildlife effects includes a 25-year time period (2010, the year the original Williams Ranger District TMR decision was first signed, to 2035). The spatial boundary encompasses the Williams and Tusayan Ranger Districts. These boundaries were chosen because they correspond to a time and place within which the effects of management on the fitness of populations of wildlife species are known or may be reasonably anticipated.

Wildlife of Highest Conservation Concern

These include threatened, endangered, and proposed species. In depth analysis for this report includes the species which do occur, or could occur in the project area, which is defined as the South Zone as a whole. These species are the MSO, California condor, and black-footed ferret. The ferret does not currently occur or have habitat in the project area (Table 4).

Table 4. List of federally listed wildlife species considered in this analysis.

Species	Status	Suitable Habitat Present	Suitable Habitat Known to Be Occupied	Description of Habitat within Project Area	Approximate Areas of Affected Habitat in Project Area*
Mexican spotted owl (*Strix occidentalis lucida)*	Threatened	Yes	Yes	Mixed-conifer and pine-oak forest.	53,084 Acres
California condor (*Gymnogyps californianus*)	Endangered	Yes	No	Present in small amounts (requires open landscapes with canyon habitat for nesting).	(Entire project area: Tusayan and Williams Districts). Condors have not been recorded regularly on the districts, though habitat does occur.
Black-footed ferret (*Mustela nigripes*)	Endangered	No	No	Not Present (requires grasslands with prairie dog town or complexes of >200 acres in size. Complex consists of 2+ neighboring towns within 4.3 miles of each other).	Currently experimentally released populations occur outside of FS land. Prairie dog populations could not support ferrets on the South Zone at this time.

*For the purposes of this analysis, the project area is defined as the entire South Zone.

Habitat acreage calculations are based on estimates of stand acres classified by cover type. Although habitat for many of these species covers large portions of the project area, direct effects of the project would be limited to the areas within and adjacent to the camping corridors and roads proposed to be opened or closed under the different action alternatives.

Mexican Spotted Owl

Affected Habitat Description

The Mexican spotted owl (MSO) was listed as a threatened species under the Endangered Species Act, effective April 15, 1993. In March 1995, the U.S. Fish and Wildlife Service prepared the Recovery Plan for the Mexican spotted owl. The Mexican spotted owl recovery plan was revised and approved by the U.S. Fish and Wildlife Service on September 5, 2012.

The project area is within the Mexican spotted owl Upper Gila Mountains (UGM) Ecological Management Unit. MSO critical habitat elements were designated by the Federal Register, 2004. Primary constituent elements of MSO critical habitat are mixed conifer, pine-oak, and riparian forest types which contain the following: high basal area of large diameter trees; moderate to

high canopy closure; wide range of tree sizes suggestive of uneven-age stands; multi-layered canopy with large overstory trees of various species; high snag basal area; high volumes of fallen trees and other debris; high plant species richness, including hardwoods; adequate levels of plant cover to maintain fruits, seeds, and regeneration to provide for the needs of MSO prey species. In the project area, 157, 278 acres is within MSO Critical Habitat Unit UGM-13 (Figures 4-6).

Currently, MSO habitat on the Kaibab National Forest is managed according to the direction in the Kaibab Forest Plan, which is informed by the 2012 Revised Recovery Plan for the Mexican spotted owl (FWS 2012).

The Revised MSO Recovery Plan, 2012, provide guidelines for the establishment and management of Protected Activity Centers (PACs) intended to protect and maintain owl habitat at historic and present locations of owl activity and the best habitat adjacent to these areas. PACs are a 600 acre minimum designated area with a 100 acre core area centering on a known (or the best available) roost site/nest.

The MSO Recovery Plan provides levels of habitat management for the owl. PACs are protected habitat. Mixed conifer and ponderosa pine-Gambel oak outside of PACs are recovery habitat. Areas not classified as a PAC or recovery habitat are considered "Other Forest and Woodland Types". Nest/Roost Recovery habitat (formally protected steep slope habitat, and target/threshold habitat) will be managed to meet the nest and roost habitat characteristics depicted in the MSO Recovery Plan. Of this recovery habitat, a minimum of 25% of mixed conifer recovery habitat and 10% of ponderosa pine-oak recovery habitat will be managed in each Ecological Management Unit (EMU) as nest/roost habitat to ensure that a sustained level of owl nest/roost habitat is well distributed across the landscape.

Within the project area boundary, 157,278 acres are designated MSO critical habitat (Figures 4-6 and Table 5). Approximately 4,992 acres within the analysis area is located within Mexican spotted owl PACs. Outside of PACs, 53,084 acres is designated as recovery habitat: 3,098 acres of mixed conifer and 49,986 acres of ponderosa pine-Gambel oak.

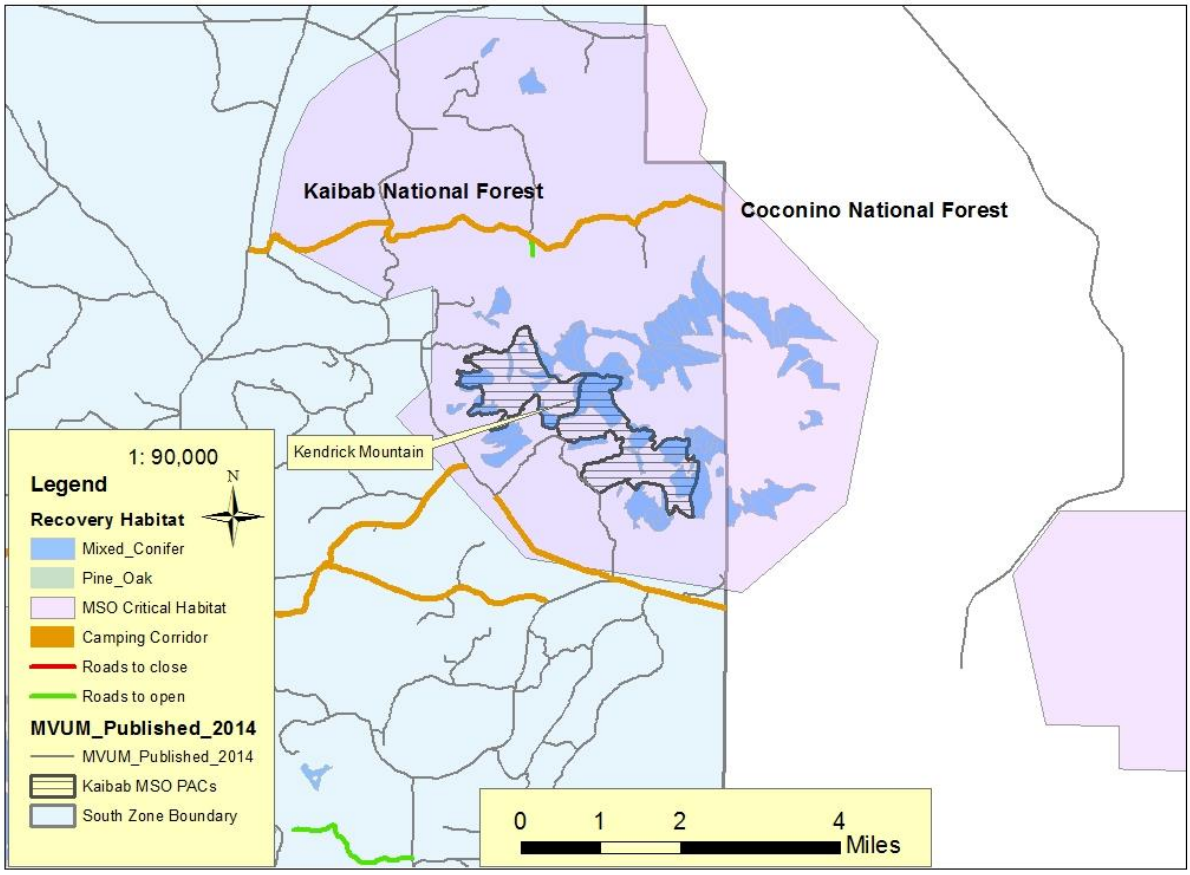

Figure 4. MSO Habitat in the Travel Management Revision Project: Kendrick Mountain Area.

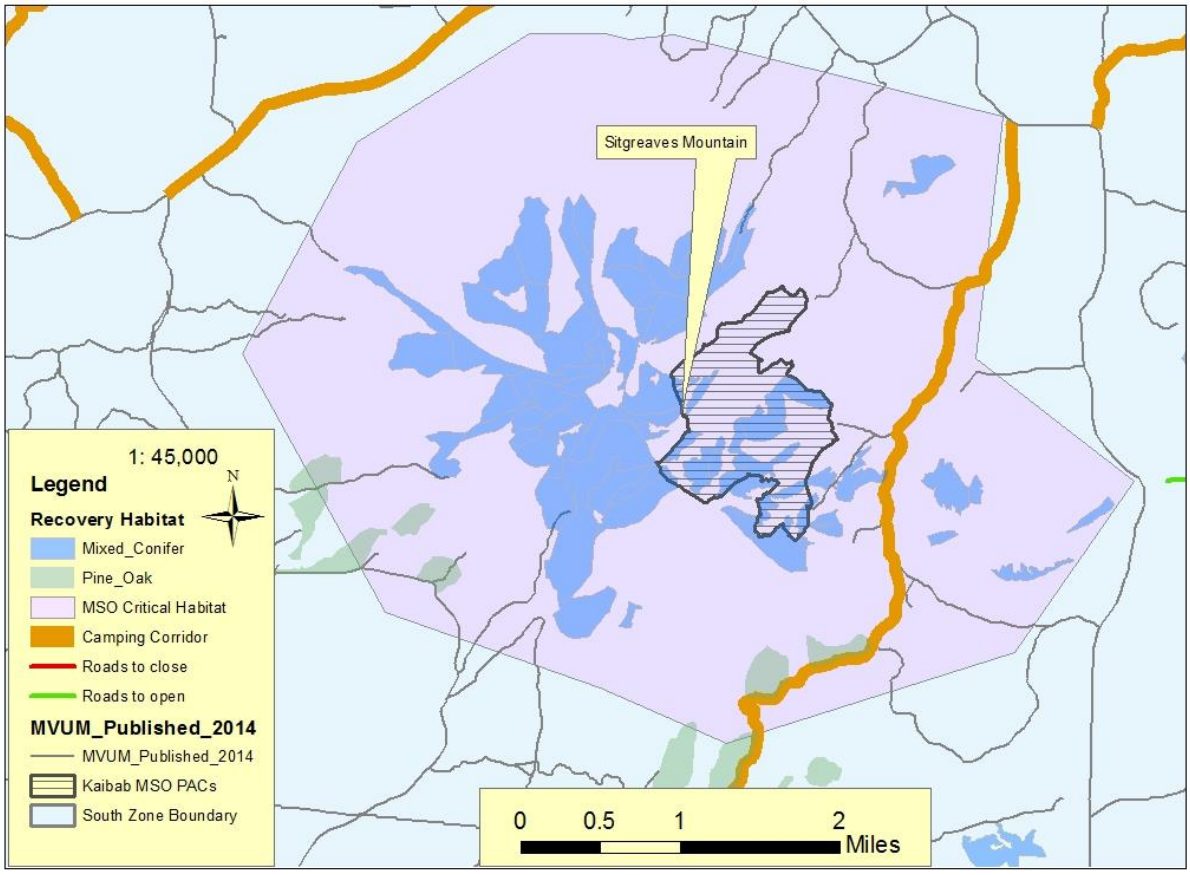

Figure 5. MSO Habitat in the Travel Management Revision Project: Sitgreaves Mountain Area.

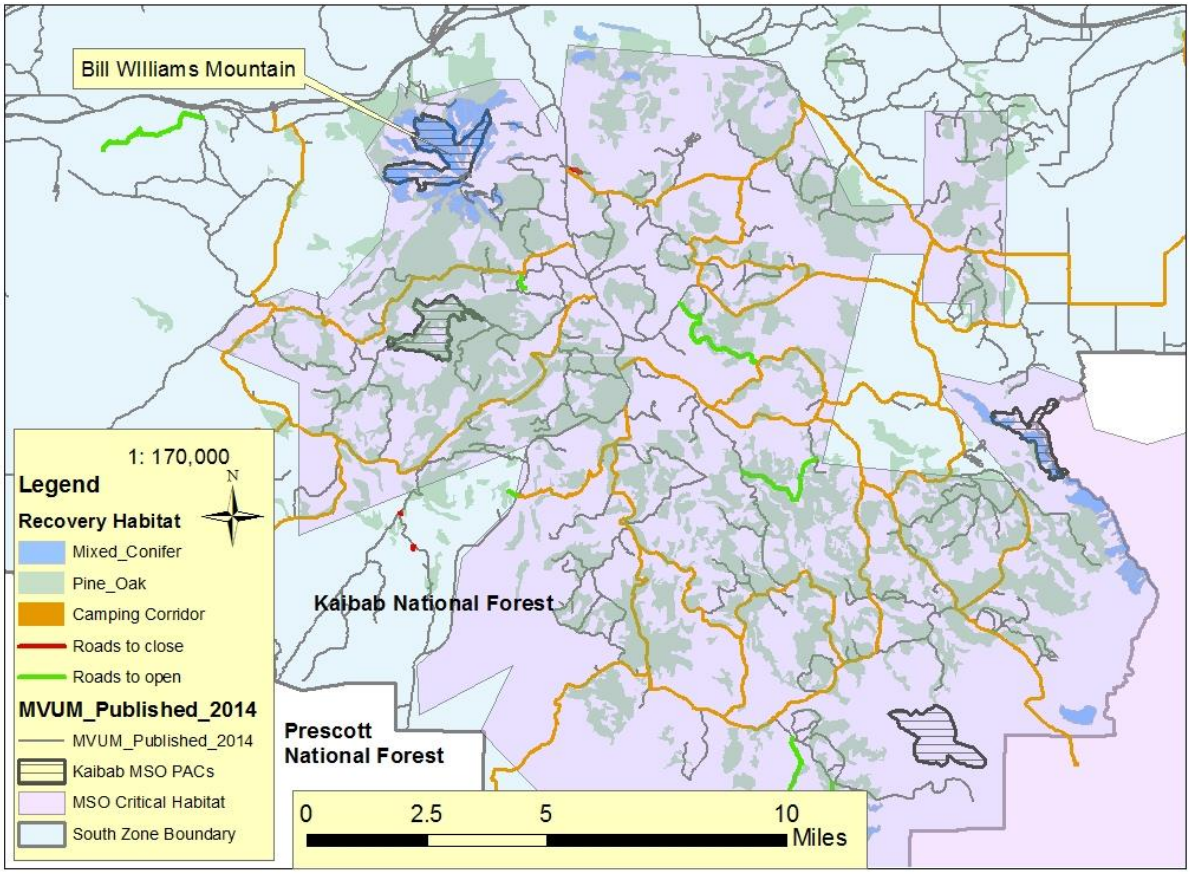

Figure 6. MSO Habitat in the Travel Management Revision Project: Bill Williams Mountain Area, McCracken Area, and Southeast to Sycamore Canyon.

Table 5. MSO habitat within the Travel Management Revision Project Area

MSO Habitat	Acres in Project Area
Designated Critical habitat	157,278
Protected Activity Centers (PACs)	4,992
Recovery Habitat Mixed Conifer	3,098
Recovery Habitat Pine-Oak	49,986

Existing Condition

The 2012 Recovery Plan provides the best available science and recommendations for the conservation of Mexican spotted owls. The project was developed with the guidance of the 2012 revision of the Recovery Plan, especially the desired conditions for nesting/roosting recovery habitat (see MSO Recovery Plan Revised Edition, Table C.2 and C.3, FWS 2012).

Population

There are seven areas on the Williams Ranger District where spotted owls are known to occur and breed, or have occurred or bred in the past, and a Protected Activity Center (PAC) has been established at each of these areas. Two PACs are located within the Williams District portion of

the Kendrick Mountain Wilderness Area (the remainder of the wilderness area lies on the Coconino National Forest), one PAC is located on Sitgreaves Mountain, one is located on Bill Williams Mountain, and two are located within the Williams Ranger District portion of the Sycamore Canyon Wilderness Area (the remainder of which is on the Coconino and Prescott National Forests). Portions of two other PACs overlap the Williams District, but they are located mostly on the Coconino National Forest. A new PAC (Bear Tank 2) was designated on the Forest in 2013, approximately five miles south of Bill Williams Mountain.

There are no MSO PACs or critical habitat on the Tusayan Ranger District.

All PACs on the Williams Ranger District are monitored every year as part of the South Zone Kaibab National Forest wildlife biologist program of work.

Relationship of the project to MSO PACs

Two of the seven PACs on the Williams District are located mostly within the Kendrick Mountain Wilderness Area, and two of the PACs are located within the Sycamore Canyon Wilderness Area. Motorized travel is prohibited within the wilderness portions of these PACs, so no camping corridors or open roads are proposed for designation in these areas.

Short segments of Forest Road 111 and Forest Road 45 intersect the Bill Williams PAC; however, no changes to these roads are proposed under this project. Forest Road 111 accesses the fire lookout and communications equipment on the summit of Bill Williams Mountain. Forest Road 111 is closed and gated during the winter, but is typically open between May and October. Forest Road 45 is not designated for motorized travel. No camping corridors or open roads are proposed for designation within the Bill Williams PAC.

The Sitgreaves Mountain PAC is not located in a designated wilderness. No camping corridors or open roads are proposed for designation within the Sitgreaves Mountain PAC.

The McCracken PAC is not located in a designated wilderness. No camping corridors or open roads are proposed for designation within the McCracken PAC.

Analysis of Effects to the MSO

The proposed Travel Management Revision project implements management that helps protect MSO habitat by increasing camping opportunities in areas that would likely have minimal impact on MSO and its habitat. There are no MSO PACs or critical habitat on the Tusayan Ranger District.

Below, each type of the project's activities was analyzed for effects to the MSO, with MSO critical habitat effects analysis in the section that follows. The activities with the potential to affect the MSO and MSO Critical habitat included for this analysis are:

- Proposed roads for dispersed camping corridors,
- Roads Proposed to be opened to motorized use (includes user created roads proposed to be added to the open road system),
- Roads proposed to be closed to motorized use, and

- The proposed adaptive management strategy

The original Travel Management Revision for the Williams Ranger District (2010) determined that the alternatives may affect Mexican spotted owls and recovery habitat, but would not adversely affect spotted owls and recovery habitat.

The primary potential effect of travel management revision on the MSO would be motor vehicle and camping related human disturbance of owls that are hunting (see below).

Effects of Alternative 3

Proposed roads for dispersed camping corridors

Designation of the camping corridors proposed under alternative 3 has the potential to cause direct and indirect affects to the MSO. These effects, however, will be minimal as MSO habitat on the South Zone has been surveyed with known locations designated as PACs. No camping corridors within PACs are proposed. Further, the camping corridor locations are all within 300 feet from either side of the centerline of the roadways in locations where owls are unlikely to nest or roost. No vegetation treatment is proposed so conditions in MSO habitat are not going to change from the existing condition. The corridor locations were selected in areas where camping has occurred before the Travel Management decisions for the Williams Ranger District in 2010, and Tusayan Ranger District in 2011, and where camping continues to occur. The proposed corridors were identified from scoping as camping areas that are important to the public, and in areas where resource concerns are minimal or can be mitigated. Alternative 3 proposes corridors that would extend 300 feet from either side of the centerline of the road except where limited by topographical factors, resource concerns, or private land. This would allow for 8 acres of camping corridors in MSO mixed conifer recovery habitat, and 2,764 acres of camping corridors in MSO pine-oak recovery habitat (Table 2). Hunting or dispersing owls could be disturbed by camping corridors proposed in alternative 3, but the likelihood of this occurring in the selected locations is very low. Motorized dispersed camping already occurs in the areas contained within the corridors, so it is unlikely the MSO will experience additional effects from dispersed camping because of the designation of camping corridors.

Roads Proposed to be opened to motorized use (Includes user created roads proposed to be added to the open road system)

No roads in PACs are proposed to be opened under alternative 3 (Figures 2 and 3). For the proposed action, there are no proposed roads to be opened in MSO mixed conifer recovery habitat. There are 2.4 miles of roads proposed to be opened in alternative 3 in MSO pine-oak recovery habitat (Table 3). As with the analysis for corridors above, the forest has been surveyed for MSO, with known locations protected. Direct or indirect effects to the MSO are considered minimal due to the low mileage of open roads proposed in recovery habitat and the selection of open roads proposed are in areas not suitable for nesting and roosting MSOs. There would be no effect to the species, recovery habitat, or critical habitat from adding open roads to the system for the Travel Management Revision proposed action.

Roads proposed to be closed to motorized use

There are 0.2 miles of roads proposed to be closed in alternative 3 in MSO pine-oak recovery habitat (Figure 2). The 140D road is on the east side of Bill Williams Mountain. It was selected for proposed closing due to watershed and wildlife (MSO) concerns, as it is within MSO pine-oak recovery habitat that has key habitat components for the MSO.

Adaptive Management

Adaptive Management would allow for a 5% net change (increase or decrease) in the open road system. Under adaptive management, roads would not be opened that would adversely affect wildlife species. Additionally, roads or camping corridors could be closed if negative effects to wildlife are being detected. As a result, adaptive management would have no effect or beneficial effects to MSO.

Analysis of Effects to Critical Habitat

MSO critical habitat elements were designated by the Federal Register 2004. All mixed conifer and pine-oak within Critical Habitat Units are designated as critical habitat. Primary constituent elements (PCEs) of MSO critical habitat are mixed conifer, pine-oak, and riparian forest types which contain the following: high basal area of large diameter trees; moderate to high canopy closure; wide range of tree sizes suggestive of uneven-age stands; multi-layered canopy with large overstory trees of various species; high snag basal area; high volumes of fallen trees and other debris; high plant species richness, including hardwoods; adequate levels of plant cover to maintain fruits, seeds, and regeneration to provide for the needs of Mexican spotted owl prey species.

An analysis of Mexican spotted owl habitat has been completed within the Travel Management Revisions project area. Within the Travel Management Revision project boundary, 157,983 acres are designated MSO critical habitat within the UGM-13 critical habitat unit (Figures 1-3).

Effects of Alternative 3

Proposed roads for dispersed camping corridors

The corridor locations were selected in areas where camping has occurred before the Travel Management decisions for the Williams Ranger District in 2010, and Tusayan Ranger District in 2011, and continues to occur (Figures 2 and 3). The proposed corridors were identified from scoping as camping areas that are important to the public, and in areas where resource concerns are minimal or can be mitigated. Designation of the camping corridors proposed under alternative 3 have the potential to cause direct and indirect effects to MSO critical habitat. These effects, however, will be minimal as no vegetative treatments are proposed and because motorized dispersed camping already occurs in the areas contained within the corridors. Mexican spotted owl habitat on the SZ of the Kaibab NF has been surveyed, with known locations designated as PACs. The camping corridor locations are all within 300 feet from either side of the centerline of the roadways in locations where owls are unlikely to nest or roost. Alternative 3 proposes corridors that would extend 300 feet from either side of the centerline of the road except where limited by topographical factors, resource concerns, or private land. This would allow for 7,820 acres of camping corridors in MSO critical habitat (Table 2). An analysis

of effects to Primary Constituent Elements from the camping corridors from alternative 3, open roads and closed roads proposed in alternative 2 follows below.

Roads Proposed to be opened to motorized use (Includes user created roads proposed to be added to the open road system)

For alternative 3, there are 7.24 miles of roads proposed to be opened in MSO critical habitat. Direct or indirect affects to MSO critical habitat are considered negligible due to the low mileage of open roads proposed in critical habitat and the selected roads being in areas not suitable for nesting and roosting MSOs.

Roads proposed to be closed to motorized use

There are 0.3 miles of roads proposed to be closed in alternative 3 in MSO critical habitat on the 140D road on the east side of Bill Williams Mountain. It was selected for proposed closing due to watershed and wildlife (MSO) concerns, being within MSO pine-oak recovery habitat and designated MSO critical habitat. This is a beneficial effect of the proposed action on the owl and its recovery habitat.

Adaptive Management

Adaptive Management would allow for a 5% net change (increase or decrease) in the open road system. Under adaptive management, roads would not be opened that would adversely affect wildlife species. Additionally, roads or camping corridors could be closed if negative effects to wildlife are being detected. As a result, adaptive management would have no effect or beneficial effects to MSO critical habitat.

Effects to Primary Constituent Elements of MSO critical habitat from implementing TMR revision are as follows:

- Range of tree species composed of different sizes will not change as a result of the proposed camping corridors as vegetation treatments are not proposed. Opening (7.24 miles) or closing roads (0.3 miles) will have no effect to MSO critical habitat. The roads are existing roads and construction is not required.
- Shade canopy would not be altered by camping corridors as vegetation treatments are not proposed. Opening (7.24 miles) or closing roads (0.3 miles) will have no effect to MSO critical habitat. The roads are existing roads and construction is not required.
- Large snags would not be affected by the proposed corridors, open roads or closed roads.
- No camping corridors, open roads, or closed roads within canyon habitat or riparian areas are proposed.
- Volumes of fallen trees and woody debris could be reduced in and around camping corridors due to increased gathering of material for campfires. These effects are considered minimal because the corridors are in areas where camping has occurred prior to the Travel Management decisions for the Williams Ranger District in 2010, and Tusayan Ranger District in 2011. This PCE will not change or be affected by any alternatives' camping corridors, open roads, or closed roads.

- Range of plant species in MSO critical habitat, especially hardwoods, would not change as a result of project implementation because no vegetative treatments are proposed in camping corridors, open roads, or closed roads.
- Residual plant cover to maintain fruits and seeds and to allow for plant regeneration will not be affected by the proposed camping corridors, open roads, or closed roads. The corridors are in areas that were used for camping prior to the Travel Management decisions for the Williams Ranger District in 2010 and Tusayan Ranger District in 2011. This PCE will not change or be affected by any alternatives' camping corridors, open roads, or closed roads.

Cumulative Effects Summary to the Species and Habitat

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological assessment. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. For the MSO species and critical habitat cumulatively on the Kaibab National Forest, there are no known specific State, tribal, local or private actions that would affect MSO.

The cumulative effects boundary for MSO is the action area, defined as the project area and a one-half mile buffer around the project. Activity effects over one-half mile from the project boundary diminish to very low levels and would not impact owls within the project (i.e noise disturbance, smoke accumulations) and therefore would not combine with effects from the Travel Management Revision project. The time period analyzed for cumulative effects to wildlife includes 25 years (from 2010, the year the original Williams Ranger District TMR decision was first signed, to 2035).

Summary of Determination of Effect to the Species and Critical Habitat

No new roads of the proposed designated road system will be located in MSO PACs. The proposal will not alter the key habitat components of MSO habitat. The proposal will not alter the primary constituent elements of MSO critical habitat. As documented in the analysis section, the level of effect from the implementation of the different phases of this proposal and the associated interrelated and interdependent actions would not exceed a level that is insignificant and discountable; therefore, a determination of **"May Affect, Not Likely to Adversely Affect"** is made for the Mexican spotted owl. For the same reason, a determination of **"May Affect, Not Likely to Adversely Affect**" is made for Mexican spotted owl designated critical habitat.

California Condor

Affected Environment

The California condor is classified as Endangered under the Endangered Species Act. In 1996 a nonessential experimental population of California condors was designated in northern Arizona and southern Utah under section 10(j) of the Endangered Species Act. Release of captive-bred condors began at the Vermillion Cliffs in 1997. The nonessential experimental population area in northern Arizona includes lands north of Interstate 40 and Highway 93 and west of Highway 191. The portion of the Williams Ranger District north of Interstate 40, as well as the entire

Tusayan Ranger District, are located within the nonessential experimental area. However, condors primarily occur around the Grand Canyon, Kaibab Plateau, Marble Canyon, Vermillion Cliffs, and parts of southern Utah (Southwest Condor Review Team 2014). Condors are opportunistic scavengers that feed primarily on large dead mammals such as deer, elk, bighorn sheep, and domestic livestock. A Review of the Third Five Years of the California Condor Reintroduction Program in the Southwest (2007-2011: SWCG 2012) found that condors have been known to fly widely, but now generally travel between two main areas, the Grand Canyon Ecoregion/Colorado River corridor in Arizona and the Kolob Terrace/Zion National Park (Zion National Park) area in Utah. Condor activity in southwestern Utah has increased considerably during the reporting period (2007-2011). Groups of condors now regularly reside in Utah from April through November. Heavy use of the Vermilion Cliffs release site by the majority of condors during the winter months followed by increasing use of the Colorado River corridor and South Rim of the Grand Canyon in early spring continue to be the norm. Although a condor may move between roost zones within the course of a day, comparing the observed roost locations from one year to the next has been most revealing. As condors became more and more self-sufficient, their patterns of seasonal movement have been more predictable. Condors with GPS transmitters have not been coming as far south as the Williams Ranger District to forage. On the Tusayan Ranger District, Condors are only rare visitors, with the majority of their time spent in the National Parks the land areas listed above.

Effects of Project Implementation

From implementation of the TMR revision there would be increased potential for motor vehicle related human disturbance of scavenging condors by designating camping corridors or opening roads. Overall, there would be no effect from implementing the travel management revision proposed action because they would result in little change in existing camping or motor vehicle use. Condors will not be disturbed by implementing the proposed action unless they begin to move differently than they have in the past. Wildlife concerns would allow for temporary closure of roads if condors will be negatively affected from human activities, and adaptive management could be used for permanent closures if roads or camping corridors are determined to negatively affect condors.

Cumulative Effects

The cumulative effects boundary for Condor is the action area, defined as the project area and a one-half mile buffer around the project. Activity effects over one-half mile from the project boundary diminish to very low levels and would not impact condors within the project (i.e. noise disturbance, smoke accumulations) and therefore would not combine with effects from the Travel Management Revision project. The time period analyzed for cumulative wildlife effects is 25 years (from 2010, the year the original Williams Ranger District TMR decision was first signed, to 2035). Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological assessment. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. For the condor cumulatively on the Kaibab National Forest, there are no known specific State, tribal, local or private actions that would affect the species.

Black-footed Ferret

Affected Environment

The black-footed ferret is classified as Endangered under the Endangered Species Act except at specific reintroduction locations in Arizona, Colorado, Montana, South Dakota, Utah, and Wyoming where ferrets are designated as nonessential experimental populations under section 10(j) of the Endangered Species Act. The Aubrey Valley black-footed ferret reintroduction area is located on State and private lands west of Seligman, Arizona and the Aubrey Cliffs. In October 2014, 24 ferrets were released at a new site near Valle, Arizona, within Espee Ranch, owned by Babbitt Ranches. The area is 40 miles northwest of Williams and is sprawling grassland habitat with a thriving population of prairie dogs.

Prairie dogs are the primary prey of and provide habitat for black-footed ferrets. The primary threat to black-footed ferrets has been loss of prairie dog colonies and complexes due to grassland conversion, poisoning, disease, and lack of active management.

Black-footed ferrets are not known to occur on the Williams Ranger District. Large prairie dog complexes are required to support a black-footed ferret population. There are scattered Gunnison's prairie dog colonies across the Williams Ranger District, but none are extensive enough to support a black-footed ferret population. Gunnison's prairie dog populations, like those of other prairie dog species, have declined substantially throughout their range. Large-scale poisoning campaigns during the 1900s decimated many populations. Gunnison's prairie dog populations have also declined more recently, primarily due to outbreaks of slyvatic plague (Wagner et al. 2006).

Effects of Project Implementation

Although black-footed ferrets do not occur on the Kaibab National Forest, travel management may affect Gunnison's prairie dog populations and thus may affect the longterm potential for black-footed ferret habitat to develop on the Forest. Alternative 3 proposes 722 acres of camping corridors in grassland habitat. In addition, alternatives 2-4 propose 4.93 miles of roads to be added to the open road system that intersect grassland habitat. Adding roads to the open road system and allowing camping in corridors may result in increased mortality of Gunnison's prairie dogs. Increased Gunnison's prairie dog mortality may result in decreased longterm probability of black-footed ferret habitat developing on the South Zone. However, ferrets are considered an experimental 10j population, and, given the absence of the species on the South Zone, there would be no effect from implementing the proposed action under the travel management revision to the black-footed ferret. Wildlife concerns would allow for temporary closure of roads if ferrets will be negatively affected from human activities. The adaptive management part of the travel management revision decision would allow for closing roads if ferrets would be affected by human activities.

Cumulative Effects

The cumulative effects boundary for ferrets is grassland habitat within the action area, defined as the habitat the species is found in the project area and a one-half mile buffer around it. Activity effects over one-half mile from habitat within the project boundary diminish to very low levels

and would not impact black-footed ferret within the project (i.e. noise disturbance, smoke accumulations) and therefore would not combine with effects from the Travel Management Revision project. The time period analyzed for cumulative wildlife effects is 25 years (from 2010, the year the original Williams Ranger District TMR decision was first signed, to 2035). Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological assessment. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. For the ferret cumulatively on the Kaibab National Forest, there are no known specific State, tribal, local or private actions that would affect the species.

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